

## Claims

1. Sensor arrangement for use in seismic investigation of geological formations below the seabed, with a plurality of sensor nodes (20), which are arranged for deployment on the seabed to acquire pressure waves and shear waves from the geological formations and to transfer seismic data to a surface receiver, **characterized in** that each sensor node (20) comprises a mainly cylindrical structure (22), which is intended to penetrate down into the seabed, and in that there is arranged a geophone (30-32), which is connected to this structure (22).
2. Sensor arrangement according to claim 1, **characterized in** that the cylindrical structure is a skirt (22).
3. Sensor arrangement according to claim 1, **characterized in** that the cylindrical structure is a ring layout of poles, with or without spaces.
4. Sensor arrangement according to any one of the claims 1-3, **characterized in** that a housing (27) that encloses at least one geophone (30-32), is arranged at the top of the skirt (22) of the sensor node (20).
5. Sensor arrangement according to claim 4, **characterized in** that an open cage (37), which encloses at least one hydrophone (38), is arranged above the housing (27), which encloses a geophone.
6. Sensor arrangement according to any one of the claims 1-5, **characterized in** that a grip (40) for a remotely operated underwater vehicle (ROV) or -tool (ROT) is fixed at the top.
7. Sensor arrangement according to claim 4, **characterized in** that the housing (27) encloses three geophones (30-32), which are positioned with a 90° angle in relation to each other, and a tiltmeter.
8. Sensor arrangement according to any one of the claims 1-7, **characterized in** that the sensor node (20) is connected to a control unit (11) through an acoustic insulated cable (21).
9. Sensor arrangement according to claim 8, **characterized in** that the cable (21) is led into the

10. Sensor arrangement according to any one of the claims 1-9, **characterized in** that the cylindrical structure, which is intended to penetrate down into the seabed, is manufactured in aluminum.

11. Sensor arrangement according to any one of the claims 1-10, **characterized in** that the hydrophone (38) is placed in the order of 10 cm above the geophone (30-32).

12. Method for operating a seismic mapping system with sensor arrangements orderly deployed on the seabed, **characterized in** that data concerning system behaviour and seismic data, which are to be processed further, are recorded by telemetry.